

**REMARKS****Summary of the Final Office Action**

Claims 15-18 stand rejected under 35 U.S.C. §102(e) as being anticipated by Sudipto et al. (JP 10-233397).

Claims 17 and 18 stand rejected under 35 U.S.C. §102(e) as being anticipated by Chan et al. (US 5,744,376).

**Summary of the Response to the Final Office Action**

Applicant has amended claims 15-18 to better define the invention. Accordingly, claims 15-18 are presently pending in this application.

**The Rejection under 35 U.S.C. §102(e)**

Claims 15-18 stand rejected under 35 U.S.C. §102(e) as being anticipated by Sudipto et al. To the extent that the Examiner may consider this rejection to apply to amended independent claims 15-18, the rejection is traversed as being based upon a reference that neither teaches nor suggests the novel combination of features now clearly required in each of independent claims 15-18. Independent claims 15-18, as amended, require a semiconductor device including at least a nonconductive layer formed by oxidation of material composing the first wiring layer, wherein thickness of said nonconductive layer being arranged above the wiring layer is thicker than that of being arranged above the insulating layer.

In contrast to the Applicant's claimed invention, the nonconductive layer taught by Sudipto et al. does not include a thickness above the wiring layer that is larger than a thickness above the insulating layer. Accordingly, Applicant respectfully submits that Sudipto et al.

neither teaches nor suggests at least a nonconductive layer formed by oxidation of material composing the first wiring layer, wherein thickness of said nonconductive layer being arranged above the wiring layer is thicker than that of being arranged above the insulating layer.

Furthermore, the nonconductive layer taught by Sudipto et al. is merely an intermediate material layer that is not a part of the final product as shown in FIG. 1c or 2B of Sudipto et al.

Accordingly, Applicant respectfully asserts that the rejection under 35 U.S.C. § 102(e) should be withdrawn because Sudipto et al. does not teach or suggest each feature of independent claims 15-18, as amended.

Claims 17 and 18 stand rejected under 35 U.S.C. §102(e) as being anticipated by Chan et al. (US 5,744,376). To the extent that the Examiner may consider this rejection to apply to amended independent claims 17 and 18, the rejection is traversed as being based upon a reference that neither teaches nor suggests the novel combination of features now clearly required by each of independent claims 17 and 18. Independent claims 17 and 18, as amended, both require at least a nonconductive layer contacting the first wiring layer and covering the first insulating layer, wherein a thickness of said nonconductive layer being arranged above the wiring layer is thicker than that of being arranged above the insulating layer.

In contrast to the Applicant's claimed invention, the nonconductive layer taught by Chan et al. does not include a thickness above the wiring layer that is larger than a thickness above the insulating layer. Accordingly, Applicant respectfully submits that Chan et al. neither teaches nor suggests at least a nonconductive layer contacting the first wiring layer and covering the first insulating layer, wherein a thickness of said nonconductive layer being arranged above the wiring layer is thicker than that of being arranged above the insulating layer. Accordingly, Applicant respectfully asserts that the rejection under 35 U.S.C. § 102(e) should be withdrawn

because Chan et al. does not teach or suggest each feature of independent claims 17 and 18, as amended.

### **CONCLUSION**

In view of the foregoing remarks, Applicant respectfully requests withdrawal of the rejection, and the timely allowance of pending claims. Should the Examiner feel that there are any issues outstanding after consideration of this response, the Examiner is invited to contact Applicant's undersigned representative to expedite the prosecution.

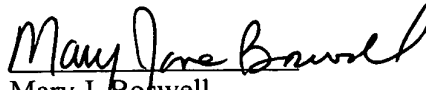
Attached hereto is a marked-up version of the changes made to the claims by the current amendment. The attachment is captioned "**VERSION WITH MARKINGS TO SHOW CHANGES MADE.**"

**EXCEPT** for issue fees payable under 37 C.F.R. § 1.18, the Commissioner is hereby authorized by this paper to charge any additional fees during the entire pendency of this application including fees due under 37 C.F.R. §§ 1.16 and 1.17 which may be required, including any required extension of time fees, or credit any overpayment to Deposit Account

No. 50-0310. This paragraph is intended to be a **CONSTRUCTIVE PETITION FOR  
EXTENSION OF TIME** in accordance with 37 C.F.R. § 1.136(a)(3).

Respectfully submitted,

**MORGAN, LEWIS & BOCKIUS LLP**

By:   
Mary J. Boswell  
Reg. No. 33,652

Dated: May 15, 2002

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**VERSION WITH MARKINGS TO SHOW CHANGES MADE**

Claim 15 has been amended as follows:

15. (Twice Amended) A semiconductor device comprising:

a first wiring layer composed of a plurality of wiring patterns separate from each other embedded and wired on an upper surface of a first insulating layer which covers a surface of a semiconductor substrate;

a nonconductive layer formed by oxidation of material composing the first wiring layer, wherein the nonconductive layer comes into contact with the first wiring layer and covers the first insulating layer, and a top of the first wiring layer is not higher than a top of the first insulating layer, **further wherein thickness of said nonconductive layer being arranged above the wiring layer is thicker than that of being arranged above the insulating layer.**

Claim 16 has been amended as follows:

16. (Amended) A semiconductor device, comprising:

a substrate;

a first insulating layer covering a surface of the substrate;

a first wiring layer including a plurality of wiring patterns separate from each other embedded and wired on an upper surface of the first insulating layer, the first wiring layer including a first material; and

a nonconductive layer formed by oxidation of the first material, the nonconductive layer contacting the first wiring layer and covering the first insulating layer,

wherein a top of the first wiring layer is not higher than a top of the first insulating layer, and a thickness of said nonconductive layer being arranged above the wiring layer is thicker than that of being arranged above the insulating layer.

Claim 17 has been amended as follows:

17. (Amended) A semiconductor device, comprising:

a substrate;

a first insulating layer covering a surface of the substrate;

a first wiring layer including a plurality of wiring patterns separate from each other embedded and wired on an upper surface of the first insulating layer; and

a nonconductive layer contacting the first wiring layer and covering the first insulating layer, the nonconductive layer includes oxygen ions,

wherein a top of the first wiring layer is not higher than a top of the first insulating layer, and a thickness of said nonconductive layer being arranged above the wiring layer is thicker than that of being arranged above the insulating layer.

Claim 18 has been amended as follows:

18. (Amended) A semiconductor device, comprising:

a substrate;

a first insulating layer covering a surface of the substrate;

a first wiring layer including a plurality of wiring patterns separate from each other and embedded on an upper surface of the first insulating layer; and

a nonconductive layer that includes oxygen ions contacting the first wiring layer and covering the first insulating layer,

wherein a top of the first wiring layer is not higher than a top of the first insulating layer, and a thickness of said nonconductive layer being arranged above the wiring layer is thicker than that of being arranged above the insulating layer.



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**BOX AF**

AF/2814

Response under 37 C.F.R. § 1.116  
Expedited Procedure  
Examining Group 2800  
PATENT

ATTORNEY DOCKET NO. 040894-5411-01

**IN THE UNITED STATES PATENT AND TRADEMARK OFFICE**

In re Application of:

Etsuyoshi KOBORI

Application No.: 09/610,148

Filed: July 5, 2000

For: METHOD OF FABRICATING  
SEMICONDUCTOR DEVICE, AND  
SEMICONDUCTOR DEVICE

**BOX AF**

Group Art Unit: 2814

Examiner: A. Mai

TECHNOLOGY CENTER 2800

MAY 17 2002

RECEIVED

Commissioner for Patents  
Washington, D.C. 20231

**AMENDMENT UNDER 37 C.F.R. § 1.116 TRANSMITTAL FORM**

1. Transmitted herewith is an Amendment Under 37 C.F.R. § 1.116 responding to the Office Action dated February 22, 2002.
2. Additional papers enclosed:
  - ☐ Drawings: ☐ Formal ☐ Informal
  - ☐ Request for Approval of Drawing Corrections
  - ☐ Form PTO-1449, \_\_\_ references included
  - ☐ Citations
  - ☐ Declaration of Biological Deposit
  - ☐ Submission of "Sequence Listing", computer readable copy and/or amendment pertaining thereto for biotechnology invention containing nucleotide and/or amino acid sequence.



**3. Extension of Time**

The proceedings herein are for a patent application and the provisions of 37 C.F.R. 1.136(a) apply.

- ☐ Applicant believes that no extension of time is required. However, this conditional petition is being made to provide for the possibility that applicant has inadvertently overlooked the need for a petition and fee for extension of time.
- ☐ Applicant petitions for an extension of time, the fees for which are set out in 37 C.F.R. 1.17(a)-(d), for the total number of months checked below:

<u>Total Months Requested</u>	<u>Fee for Extension</u>	<u>[Fee for Small Entity]</u>
<input type="checkbox"/> one month	\$ 110.00	\$ 55.00
<input type="checkbox"/> two months	\$ 400.00	\$200.00
<input type="checkbox"/> three months	\$ 920.00	\$460.00
<input type="checkbox"/> four months	\$1,440.00	\$720.00

Extension of time fee due with this request: \$\_\_.

If an extension of time is required, please consider this a Petition therefor.

An extension for \_\_ months has already been secured and the fee paid therefor of \$\_\_ is deducted from the total fee due for the total months of extension now requested.

**4. Constructive Petition**

**EXCEPT** for issue fees payable under 37 C.F.R. § 1.18, the Commissioner is hereby authorized by this paper to charge any additional fees during the entire pendency of this application including fees due under 37 C.F.R. §§ 1.16 and 1.17 which may be required, including any required extension of time fees, or credit any overpayment to Deposit Account 50-0310. This paragraph is intended to be a **CONSTRUCTIVE PETITION FOR EXTENSION OF TIME** in accordance with 37 C.F.R. § 1.136(a)(3).

## 5. Fee Calculation

CLAIMS AS AMENDED						
	Claims Remaining After Amendment		Highest No. Previously Paid	Present Extra	at Rate of	Total Fees
Total Claims	4	minus	20	0	x \$18.00 each=	+\$ 0.00
Independent Claims	4	minus	4	0	x \$84.00 each=	+\$ 0.00
First presentation of Multiple dependent claim(s)					\$ 280.00	+\$ 0.00
<b>SUB-TOTAL =</b>						<b>\$ 0.00</b>
<b>Reduction by ½ for filing by a small entity</b>						<b>- \$ 0.00</b>
<b>TOTAL FEE =</b>						<b>\$ 0.00</b>

6. Fee Payment

- ☒ No fee is to be paid at this time.
- ☐ A check in the amount of \$194.00 representing fee for one month extension of time and fee for additional independent claims exceeding three. The Commissioner is hereby authorized to charge any additional extension of time fee or additional fee for claims due to Deposit Account No. 50-0310.
- ☒ The Commissioner is hereby authorized to charge any fees including fees due under 37 C.F.R. § 1.16 and § 1.17 which may be required, or credit any overpayment to Deposit Account 50-0310.

Respectfully submitted,

**MORGAN, LEWIS & BOCKIUS LLP**

By: Mary Jane Bdsweil  
Mary J. Bdsweil  
Reg. No. 33,652

Dated: May 15, 2002

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